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AUTHOR	Culbert, Elizabeth; Flood, Michelle; Windler, Rachel; Work, Debra
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ABSTRACT

A study investigated the use of graphic organizers in classrooms--specifically examined was the use of graphic organizers as visual and organizational tools to facilitate student comprehension of expository text. Subjects consisted of 107 kindergarten through eighth-grade teachers (both regular and special educators) teaching in rural and urban districts in western New York. For organizational purposes, subjects were grouped into three categories: primary (K-2); intermediate (3-5); and middle (6-8). Teachers were surveyed regarding the use of graphic organizers; more in-depth interviews were conducted with six teachers. Findings of both the survey and the interview show that many teachers do not grade their students' graphic organizers. Teachers do find that graphic organizers improve their presentation of materials; 90.2% of respondents indicated that their instruction was improved through the use of graphic organizers. Based on the survey and interview results, graphic organizers are being used in many classrooms, across grade levels, to facilitate the learning of expository text. Results also indicated that most teachers complete graphic organizers with their students, instead of completing them alone and presenting them to the students. Teachers feel that use of graphic organizers increases student comprehension of text, and that students were more engaged in learning when they participated in the completion of graphic organizers. Graphic organizers most commonly employed used shapes to provide a visual representation of the main points presented in the expository text. (Contains 30 references; appendixes present survey and interview sample forms and also survey and interview results and data tables.) (NKA)

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ED 418 381

A Qualitative Investigation

of the

Use of Graphic Organizers

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Elizabeth Culbert

Alexander Central School District, Alexander, NY

Michelle Flood

West Irondequoit Central School Disrtict, Rochester, NY

Rachel Windler

Rochester City School District

Debra Work

Rochester City School District

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Graphic Organizers: A Review of Literature

Comprehending and retrieving information from expository text poses one of the most difficult tasks encountered by students in school. The task of comprehending is made even more difficult by academic textbooks, which are often poorly organized. Graphic organizers have been used to assist learners' comprehension by explicitly highlighting main ideas and showing the relationships between the main ideas and supporting details. The commonalties among the research (Griffin et al., 1995; Griffin et al., 1991; Simmons et al., 1988; Bean et al., 1986; Alverman, 1981) indicated that the key aspects of graphic organizers showed interrelationships among ideas within expository text, had a hierarchical structure, and identified important concepts in a visual-spatial manner. These key features were developed to aid the learner in comprehending expository text which are difficult to understand due to structure (Griffin et al., 1991; Guri-Rozenblit, 1989; Simmons et al., 1988; Berkowitz, 1986). Medo and Ryder (1993) stated that "textbooks are incoherent and inherently incomplete because they failed to explain major concepts and the connections of ideas and events." Therefore, the purpose of graphic organizers was to help make these texts more "accessible and comprehensible for the learner" (Simmons et al., 1988).

History

The history of graphic organizers is rooted in David Ausubel's advanced organizers. Ausubel (1969) defined "organizer" in his glossary as follows:

> Introductory material presented in advance of and at a higher level of generality, inclusiveness, and abstraction than the learning task itself, designed to promote subsumptive learning by providing ideational scaffolding or anchorage for the learning task and/or by increasing the discriminability

> between the new ideas to be learned and related ideas in cognitive structure (p. 606).

Ausubel (1968) further described the purpose of the organizer as bridging "the gap between what learners already know and what they have to learn at any given moment in their educational careers" (p. 336).

Ausubel's advanced organizers took the form of prose and were written in higher level vocabulary than the actual text they preceded. A graphic form of advanced organizer, the structured overview, was developed by Barron (1969) and Earle (1970). The structured overview was designed to illustrate relationships among concepts in a hierarchical organization. The illustration included only key vocabulary terms to eliminate lengthy and difficult text. Simmons et al. (1988) stated that the structured overview was something that the teacher used to organize and structure the information *for* the students. Both the advanced organizer and the structured overview were used as a pre-reading strategies. Later, the graphic organizer began to replace the term structured overview as its use was expanded for supplementary and post-reading activities.

The term graphic organizer was not used until the 1980's, but its illustrative structure was present when advanced organizers were introduced. Ausubel's (1969) book *School Learning* included several figures to illustrate different concepts, but he did not call them organizers. He used the words "paradigm" (p. 505), "schematic representation" (p. 55), or "diagram" (p. 554) to describe illustrations which had hierarchical order and used geometric shapes. These characteristics are common for today's graphic organizers.

The concept of graphic organizers is loosely interpreted among professionals. Teachers often refer to pre-writing webs as graphic organizers (Dodge, 1994). However, current usage indicates that graphic organizers are visual representations of abstract information (Griffin et al., 1995; Griffin et al., 1991; Simmons et al., 1988). In addition, the distinction between semantic maps and graphic organizers needs clarification. Some sources use these terms separately (Weaver, 1994; Readance et al., 1985). However,

Cooper (1993) referred to the semantic maps and graphic organizers as virtually the same instructional tool, but only noted that the graphic organizer was more detailed.

Vacca and Vacca (1986) described several forms of "free-form outlining" (p. 266), which could be considered graphic organizers based on their definition and their description. This adds more confusion to forming a concrete understanding of graphic organizers. The main purpose of the "free-form outline" was to create "a logical arrangement among key words or phrases which connected main ideas to subordinate information" (p. 267). Semantic mapping was considered an example, and was defined as "an organizational tool to visually illustrate categories and relationships associated with a core question or superordinate concept under study" (p. 268). In Vacca and Vacca's more recent text *Reading and Learning to Read* (1995), the term graphic organizer was used to describe the visual representation where "key technical terms were arranged to show their relationships to each other" (p. 436).

Regardless of what term is used for organizational frameworks, they are rooted in schema theory. Schema theory refers to how knowledge of concepts is organized, stored and retrieved from memory (Dunston, 1992). Dunston stated that "existing schemata and the information contained within is known as prior knowledge" (p. 59). Graphic organizers enable the learner to use his/her prior knowledge to interact with the text at a more complex level. Once prior knowledge is activated, the learner can take this new information and add it to his/her schema, thus, improving comprehension.

Types of Graphic Organizers

There are many different types of graphic organizer frameworks which are constructed to aid in reading comprehension. Regardless of the material for which the graphic organizer was created, many characteristics are consistent among them. One of the most consistent frameworks of graphic organizers is the hierarchical structure (Griffin et al., 1991; Guri-Rozenblit, 1989; Simmons et al., 1988; Moore and Readence, 1984).

For example, Simmons et al. stated that facts within the graphic organizer were "structured to reflect the hierarchy of information within the passage and the relationships of individual facts within the hierarchy" (p. 17), and Barron (1969) portrayed text concepts in a visual hierarchy, which were less linear and formal than an outline. The justification of using hierarchical structures was supported by Bransford (1979), who asserted that it is easier to recall and remember information that is organized hierarchically when compared to information presented in a linear arrangement. Spatial configuration is another characteristic of graphic organizers, and it refers to the placement of the shapes on the page. Spatial organization differs for each organizer depending on the relationship of the key points in texts (Griffin et al., 1995; Dole, 1991; Simmons et al., 1988).

A variety of geometric shapes, which change for each idea shown, can be used to organize the information based on common concepts (Griffin et al., 1991; Gur-Rozenblit, 1989; Hawk, 1986; Alverman, 1982). For instance, Cooper (1993) provided an example of a graphic organizer which used rectangles for descriptions, circles for examples, and squares for other types of information around a central idea. Lines and arrows were used to connect shapes to show the relationships between the information. Occasionally, words were written on the arrows to explicitly state the connection between the ideas (Cooper, 1993; Boothby and Alverman, 1984). Small shapes were used to limit the amount of information placed on the organizer. This encouraged the learner to use concise wording, including simple sentences, phrases, and words. In addition, this forced the learner to highlight the critical information rather than summarizing the entire text (Simmons et al., 1988; Griffin et al., 1991).

Effectiveness

Extensive research has been done to investigate the effectiveness of graphic organizers in improving comprehension of expository texts. Within the studies, graphic organizers were used as instructional tools in many different ways. Researchers have

looked at when it is most effective and appropriate to use graphic organizers in relation to text reading. They have looked at graphic organizers as pre-reading, during reading, and post-reading strategies (Dana, 1980). Pre-reading graphic organizers are constructed by teachers to help structure the lesson and material to be learned, pre-teach vocabulary, and to activate prior knowledge (Simmons et al., 1988). This strategy aims to prepare learners to begin thinking about the material they will be reading.

Since pre-reading organizers are constructed by the teacher with no student input, many researchers began modifying their use for during and after reading to increase student involvement. Use of graphic organizers during and after reading encourages student involvement in completing the organizer. In this sense, the student interaction with the text is ensured in order to complete the organizer (Griffin et al., 1995; Guri-Rozenblit, 1989; Simmons et al., 1988; Bean et al., 1986; Boothby and Alvermann, 1984). When using graphic organizers during and after reading, learners are often expected to complete part or all of the information as they find key points and note relationships in the text. In order to optimize the learning situation, the instructor should carefully choose when to use the graphic organizer as a reading comprehension aid.

The method with which graphic organizers are used to facilitate learning varies considerably depending on the instructor, the students, and the text being read. First of all, the person who develops the graphic organizer frame can be the author(s) of the textbook, the teacher, or even the students. There are also many commercially made graphic organizers that can be used for specific types of material, including cause and effect relationships, tree diagrams, and compare/contrast organizers. Because the graphic organizer requires learners to analyze and synthesize information, the task of completing one is rather complex. For this reason, many researchers have investigated the effects of instructing students how to use graphic organizers. Specifically, they analyzed the information within the text with the students to pull out key points and to identify relationships (Griffin et al., 1995; Guri-Rozenblit, 1989; Bean et al., 1986; Boothby and

Alvermann, 1984; Alvermann, 1982). These results were often compared to students who were simply given the organizer frame and expected to complete it upon reading the expository text. Choosing to instruct learners in the use of graphic organizers has been an important point of research because of the possible benefits.

Research has noted that in order for graphic organizers to be most successful, the learners need to be instructed in their correct use. Extensive studies have been done to find out how effective graphic organizers are based on the method used to complete the organizer (Griffin et al., 1995; Berkowitz, 1986; Boothby and Alvermann, 1984). One way graphic organizers can be used to improve comprehension is by presenting a teacher-completed graphic organizer to students during or after reading. With this type of graphic organizer, the teacher can either cover all the material and show the relationships, or discuss the material with the children while encouraging them to notice and point out key information and relationships. Another consideration to be made at this point is whether to present the children with their own completed copy to use as a reference, or give them a blank form to have them copy the information presented by the teacher.

Another way to use the graphic organizer is to present students with only the frame (Griffin et al., 1995; Alvermann, 1982; Dana, 1980). Then during or after reading, the teacher can fill it out for the students as they listen, or the teacher can elicit their input and have them fill in the required information. This is often the preferred method because it teaches students how to use graphic organizers properly. Once the children understand the graphic organizer's structure, they can also complete them on their own or in small groups.

The purpose of most of the research conducted on graphic organizers was to test the effectiveness of using them to enhance students' comprehension of expository text (Griffin et al., 1995; Griffin et al., 1991; Guri-Rozenblit, 1989; Simmons et al., 1988; Boothby and Alvermann, 1984; Alvermann, 1982; Alvermann, 1981). In addition, most studies compared the effectiveness of graphic organizers to reading without the use of

graphic organizers by using immediate tests, as well as delayed tests. Most of the results of the immediate tests found that graphic organizers were more effective than the non graphic organizer groups. However, not all of them were stastistically significant (Griffin et al., 1995; Griffin et al., 1991; Simmons et al., 1988; Boothby and Alvermann, 1984). Some studies did find that graphic organizer groups scored significantly higher on immediate posttests than non graphic organizer groups (Guri-Rozenblit, 1989; Alvermann, 1982; Alvermann, 1981). In addition, Guri-Rozenblit (1989) found that their graphic organizer group which had the graphic organizers explained to them, scored higher than the unexplained graphic organizer group.

The results of the delayed tests were also mixed. Some studies found that graphic organizers did not differ for non graphic organizers on delayed tests (Griffin et al., 1995; Griffin et al., 1991). Simmons et al. (1988) found that the pre-reading graphic organizer groups were more effective than the post-reading graphic organizer groups, however it was not found to be significantly higher compared to traditional instruction. Boothby (1984) found no significant difference between the graphic organizer and the non graphic organizer groups, but the graphic organizer group did score higher. In comparison, Alvermann (1981) found that graphic organizer groups recalled significantly more information than non graphic organizer groups. When looking at the transfer of information learned, Griffin et al. (1995) found graphic organizers to be significantly better than the traditional group.

The review of experimental research involving graphic organizers points to many inconsistencies and raises a great many questions regarding future research. To date, there is no consensus as to which types of graphic organizers are most effective, who should construct them, when they should be introduced in a lesson, whether they induce deeper processing, or how influential they are in impacting long term recall of information. Graphic organizers which are presented as post-reading aids have been reported to have a

greater positive effect on comprehension than those presented prior to reading, but the effects are frequently minimal and must be interpreted with caution.

Most research findings were difficult to compare due to differences in population size, age of subjects, and the methods by which the graphic organizers are introduced and constructed. Studies have included as few as 24 (Griffin et al., 1991) research subjects to as many as 455 (Hawk, 1986). A number of studies (Balajthy and Weisberg, 1990; Simmons et al., 1988) administered pretests to subjects to determine prior knowledge while other studies (Alvermann, 1981) looked at ability level but ignored prior knowledge of the topic material.

While some studies provided subjects with extensive training in the use of graphic organizers, other studies made no attempt to familiarize subjects with graphic organizer use prior to introducing them. Explicit and implicit graphic organizer instruction was provided over a period of ten days (Griffin et al., 1995) to subjects reading experimental passages from a chapter in a social studies book. Other studies used graphic organizers but provided no instruction prior to using them with subjects (Hawk, 1986). These are a few examples of the inconsistencies between the research that has been conducted on graphic organizers.

Background

Most of the research that has been conducted on graphic organizers has looked at the effects on comprehension for the learner. Although there is a commonly held belief among educators that graphic organizers will improve the comprehension of expository text, the results of the current body of research have been inconsistent and inconclusive. Furthermore, future research needs to include larger samples, similar subject pools, common treatments, and consistent goals. The wide variety of research reviewed has all been quantitative, which tells the reader whether or not graphic organizers are effective.

Although there is great value in quantitative research, it does not indicate what is currently happening in many classrooms.

Purpose

The present study was designed to investigate the current use of graphic organizers in classrooms. The purpose of this study was to investigate the use of graphic organizers as visual and organizational tools to facilitate student comprehension of expository text. Specifically, answers to the following questions were sought:

1) Do teachers use graphic organizers in their classrooms when reading expository text?
2) What effects do teachers see when they use graphic organizers, as compared to traditional instruction?
3) What characteristics do the graphic organizers have in common?
4) When are teachers using graphic organizers, and why?

Methodology

Subjects

The subjects consisted of 107 kindergarten through eighth grade teachers. The subjects taught in rural, suburban, and urban districts in Western New York and included both regular and special educators. For organizational purposes the subjects were grouped into three categories: primary (K-2), intermediate (3-5) and middle (6-8). The participants reported a range of teaching experience from one to thirty-six years.

Materials

Survey

In order to determine how and when teachers employ graphic organizers surveys were distributed to the subjects. The survey consisted of twenty questions covering the use of graphic organizers (Appendix A). Teachers were asked to rate each question on a

five point scale. *One* signified strongly disagree or never, while *five* signified strongly agree or most of the time, depending upon the type of question. Respondents were asked to specify the subject they taught, grade level, and years of experience.

Interviews

In order to obtain more in-depth information interviews were conducted with six teachers. The questions for the teacher interviews were pulled from the survey (Appendix B). The open-ended interviews consisted of sixteen questions and included their personal definition of graphic organizers.

Procedures

Surveys

The researchers developed a survey based on information obtained from a preliminary review of research and recommendations from colleagues. The survey was randomly distributed to three participating school districts. One hundred and seven surveys were returned and analyzed. An overall table of results was created to search for notable findings (Appendix C). The notable findings were graphed for presentation purposes and are included in appendixes D through N. More detailed comparisons were obtained by grouping surveys by grade level.

Interviews

The researchers developed an interview based on the survey. Questions were added to obtain more detailed information and to provide subjects with the opportunity to clarify their survey responses. Individual interviews were conducted with six educators who had previously completed the graphic organizer survey. A question was added asking subjects to define graphic organizers in order to compare their definition with that most often found in the research. Additionally, subjects were asked to provide examples of graphic organizers they have used in their classrooms. The interview results were analyze and compared with the overall findings from the surveys. Also, commonalties were noted and recorded among the six teachers interviewed.

Results

Information obtained from survey responses was tallied and graphed according to the rating scale found on the survey. After dividing the surveys into primary, intermediate and middle school categories, graphs (Appendixes D, E, F) were constructed to show the frequency of the use of graphic organizers in the content areas. There was not a significant difference between grade levels, but overall only 14% of the total respondents rarely or never use them (Appendix G).

Two survey questions addressed how the graphic organizers were completed. Question #6 stated "I (teacher) fill in the graphic organizers and present it to the students," and question #7 stated "My students fill in the graphic organizers with guidance." The results (Appendix H) indicated that graphic organizers were most frequently (68%) completed by the students with teacher guidance (most of the time, 43.3%, and always, 25%). In contrast, only 25% of teachers complete them for the student (most of the time, 14.4%, and always, 10.6%).

According to the survey findings, teachers noted improvements in their students' comprehension with the aid of graphic organizers. Eighty-six percent of teachers indicated an increase in short-term comprehension when using graphic organizers (sometimes, most of the time, and always). Furthermore, 67.2% of teachers indicated an increase in long-term comprehension when using graphic organizers (sometimes, most of the time, and always). The results to determine when teachers use graphic organizers were also closely examined. They indicated that for "most of the time" and "always" 28% reported they used them before reading, 49% during reading, and 65% after reading (Appendix I).

The survey and the interviews investigated whether or not teachers use different shapes for their graphic organizers. The survey reveals that only 6.8% of the teachers do not use different shapes (Appendix J). The interviews conducted support the finding that

teachers use different shapes in their graphic organizers, such as circles, rectangles, triangles, ovals, and squares.

The findings of both the survey and the interview show that many teachers do not grade their students' graphic organizers. Out of the 107 respondents, 61.1% never or rarely grade them (Appendix K). The interviews of those who do grade them gave the indication that they are graded as part of an exam.

According to the survey results, teachers do find that graphic organizers improve their presentation of materials (Appendix L). Overall, 90.2% of respondents indicated that their instruction was improved (sometimes, most of the time, or always) through the use of graphic organizers. The interviews elaborated on this by reporting that it helps them to get organized and make the material more interesting.

Discussion

Based on the survey and interview results, graphic organizers are being used in many classrooms, across grade levels, to facilitate the learning of expository text. Those interviewed indicated that they use graphic organizers to condense information and represent it visually. In addition, teachers listed a variety of other benefits, which include the following: a tool for reinforcement, enhances learning, and helps them focus on main ideas. Griffin et al. (1995) supports the finding that graphic organizers are used to pull out key points and identify relationships.

The survey and interview results indicated that most teachers complete graphic organizers with their students, instead of completing them alone and presenting them to the students. The teachers felt that students were more engaged in learning when they participated in the completion of graphic organizers. These results are consistent with other researchers (Alvermann, 1982; Dana, 1980) who found that students benefited from their active involvement with graphic organizers.

The study found that many of the teachers surveyed and interviewed use graphic organizers with expository text because they feel it increases student comprehension.

Most teachers indicated that they saw more of an increase in student comprehension over a short-term period, in comparison to a long-term period. Upon reflection, these results may be flawed due to the terminology of the question. The questions addressed increase in short-term and long-term comprehension, however, the term "recall" should have been used instead of "comprehension." Comprehension refers to an understanding of the texts, whereas recall refers to remembering information over a specified period of time. It is uncertain whether the subjects see graphic organizers as an aid to comprehension, or as a study aid to remember information.

The present study found that more teachers use graphic organizers during and after the reading of expository text. These results are supported by Simmons et al. (1988) who found that in order to increase student involvement teachers use graphic organizers during and after reading. The interviews conducted in the present study found that teachers use the graphic organizers during and after the reading of expository text. They noted that graphic organizers help students organize the selections as they read, and note relationships upon completion of the text.

Different geometric shapes (Appendix M, N, O) are used within graphic organizers to organize information based on common concepts and to demonstrate or identify changes in ideas (Guri-Rozenblit, 1989). One of the survey and interview questions in the present study examined whether or not teachers use different shapes when making graphic organizers. The survey results found that many teachers use different shapes. However, during the interviews, samples were collected, and those samples did not incorporate the use of different shapes *within* a single graphic organizers (Appendix P, Q). A conclusion can not be formed about the use of different shapes, due to the unclarity of the question. The question states that "I use different shapes for my graphic organizers," but to clarify this data the question should have read "I use different geometric shapes within a single graphic organizer."

Implications

The present study was designed to investigate the current use of graphic organizers in classrooms. The findings showed that most of the teachers surveyed are using graphic organizers in their classrooms when reading expository text. In addition, the study showed that many teachers noted that students are actively involved with the text when using graphic organizers. The study also found that the graphic organizers most commonly used by the subjects used shapes to provide a visual representation of the main points presented in the expository text. Furthermore, graphic organizers are most often being used during and after the reading of expository text in order to increase student involvement. Graphic organizers are visual aids which assist students in comprehending and retrieving information from expository text, one of the most difficult tasks they encounter in school.

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Appendix A

Graphic Organizers

Teacher Survey

When responding to this survey, please consider your use of graphic organizers in relation to teaching reading comprehension in the use of expository texts only (not semantic maps/webs or prewriting organizers).
When answering the questions please use the following ranges:
1 = Strongly disagree to 5 = Strongly agree OR
1 = Never to 5 = Always

What grade do you teach? _____ Number of students? _____
What subjects do you teach? _____
How many years have you been teaching? _____ ___ Urban ___ Rural or ___ Suburban

1. I currently use graphic organizers (GO's) for content areas in my classroom.	1 2 3 4 5
a. Social Studies	1 2 3 4 5
b. Science	1 2 3 4 5
2. I see an increase in comprehension for a short-term period when using GO's.	1 2 3 4 5
3. I see an increase in comprehension for a long-term period when using GO's.	1 2 3 4 5
4. I use pre-made graphic organizers.	1 2 3 4 5
5. I create the graphic organizers that I use.	1 2 3 4 5
6. I fill in the graphic organizers and present it to the students.	1 2 3 4 5
7. My students fill in the graphic organizers with guidance.	1 2 3 4 5
8. My students fill in the graphic organizers independently (or with peers).	1 2 3 4 5
9. I have students create the graphic organizers and put the information in them.	1 2 3 4 5
10. I instruct students on how to fill in and study from graphic organizers.	1 2 3 4 5
11. I use graphic organizers for pre-readings of expository text.	1 2 3 4 5
12. I use graphic organizers during the reading of expository text.	1 2 3 4 5
13. I use graphic organizers after the reading of expository text.	1 2 3 4 5
14. My district promotes the use of graphic organizers.	1 2 3 4 5
15. I feel graphic organizers are more effective with lower readers than stronger readers.	1 2 3 4 5
16. My students use graphic organizers to study for exams.	1 2 3 4 5
17. I use different shapes for my graphic organizers.	1 2 3 4 5
18. My students enjoy using graphic organizers.	1 2 3 4 5
19. I grade my students graphic organizers.	1 2 3 4 5
20. Using graphic organizers improves my presentation of expository material.	1 2 3 4 5

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Appendix B

Graphic Organizers
Teacher Interview

What grade do you teach? _____ Number of students? _____
What subjects do you teach? _____
How many years have you been teaching? _____ What district? _____

1. What do you think GO's are? (outlines, cause and effect, semantic/concept map, tree/web)

_____
_____
_____
_____
_____

2. What is your purpose in using GO's?

_____
_____
_____
_____
_____

3. Do you currently use graphic organizers (GO's) for content areas in your classroom? Do you use them for Social Studies and Science?

_____
_____
_____
_____
_____

4. Do you see an increase in comprehension for a short-term period when using GO's? Do you see an increase for a long-term period?

_____
_____
_____
_____
_____

5. Do you use pre-made GO's, create them, or a combination of both? Explain, and provide some examples if possible.

_____
_____
_____

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Appendix B (con't)

6. Do you fill in the GO's and then present them to the students, fill them in with the students, or do the students fill them in independently (or with peers)? Please explain how you use them.

7. Do your students create the GO's and fill in the information?

8. Do you instruct your students on how to fill in and study from GO's? If yes, how do you instruct them?

9. When do you use GO's? (pre-reading, during or after expository text)
   Do your students use them to study for exams?

10. Do you feel that GO's are effective? Which students are they more effective with? (lower or higher readers)

Appendix B (con't)

11. What benefits do you see when using GO's? (student learning and engagement)

12. What do your GO's look like? (shapes, lines, arrows, size, organization)

13. Do your students enjoy using the GO's?

14. Do you grade your students GO's?

15. Do you find GO's to be helpful with your presentation of expository material?

16. Do you receive any feedback from students and parent? If so, what was it?

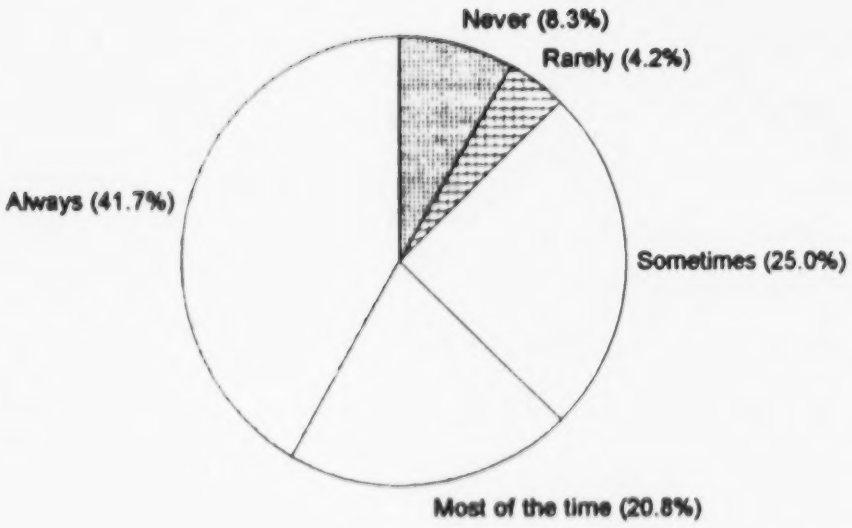
Appendix C

Graphic Organizer Teacher Survey: Results

	1	2	3	4	5
1	9	6	24	25	32
1a	7	6	27	23	25
1b	9	8	23	18	21
2	3	3	33	31	31
3	5	9	33	32	21
4	10	11	35	32	17
5	10	13	22	34	24
6	30	26	22	15	11
7	5	5	23	45	26
8	11	15	32	29	13
9	33	28	16	13	13
10	9	11	24	33	27
11	17	27	30	15	14
12	10	15	28	30	21
13	8	6	22	36	31
14	12	13	18	18	38
15	29	19	31	8	14
16	28	13	21	22	15
17	6	1	24	32	41
18	7	1	33	34	27
19	40	23	23	9	8
20	5	5	23	30	41

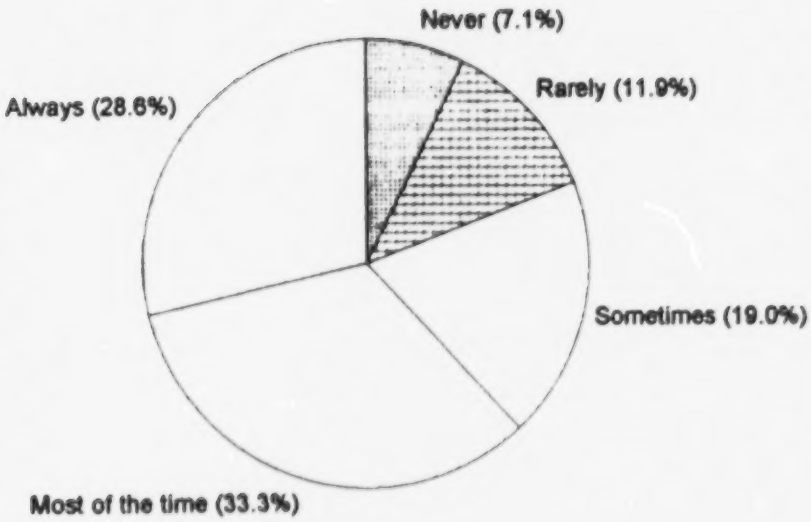
Appendix D

Do primary teachers use graphic organizers for teaching content areas?



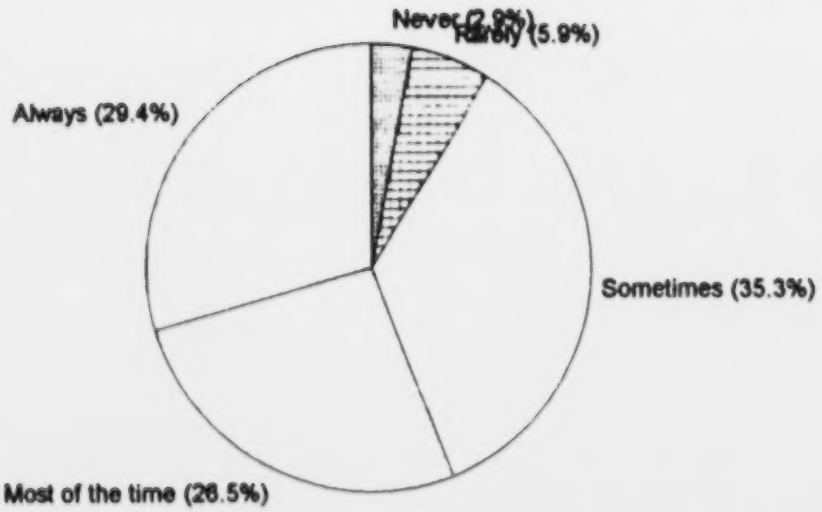
Appendix E

Do intermediate teachers use graphic organizers for teaching content areas?



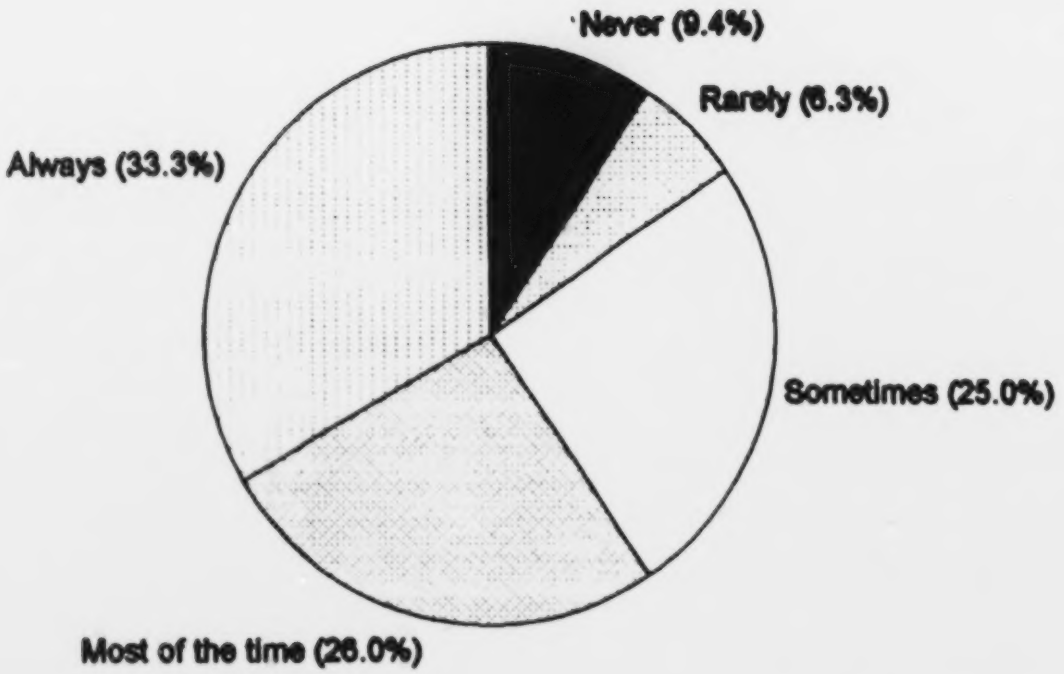
Appendix F

Do middle school teachers use graphic organizers for teaching content areas?



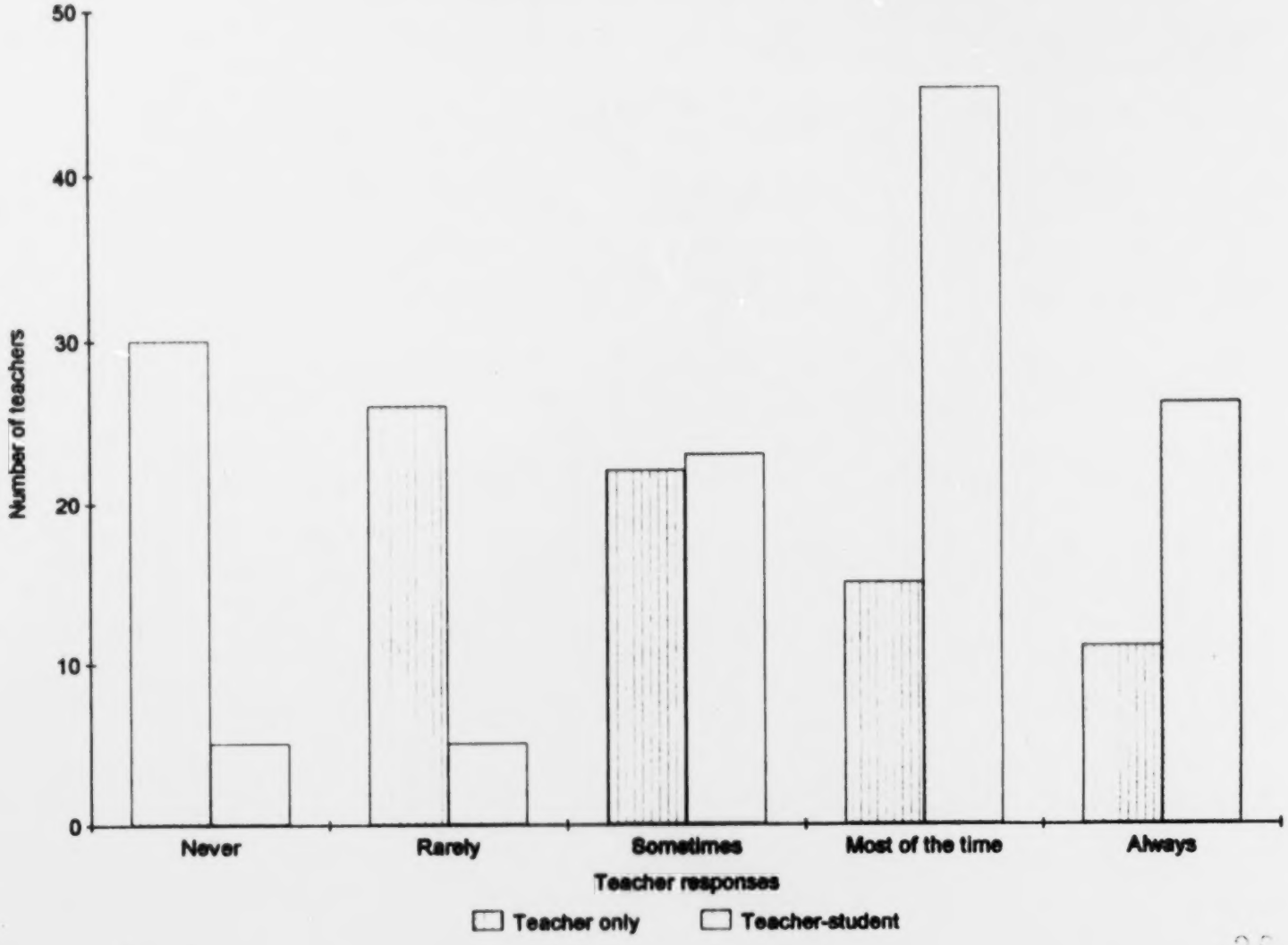
Appendix G

Do teachers use graphic organizers when teaching content areas?



Appendix H

How are graphic organizers completed?



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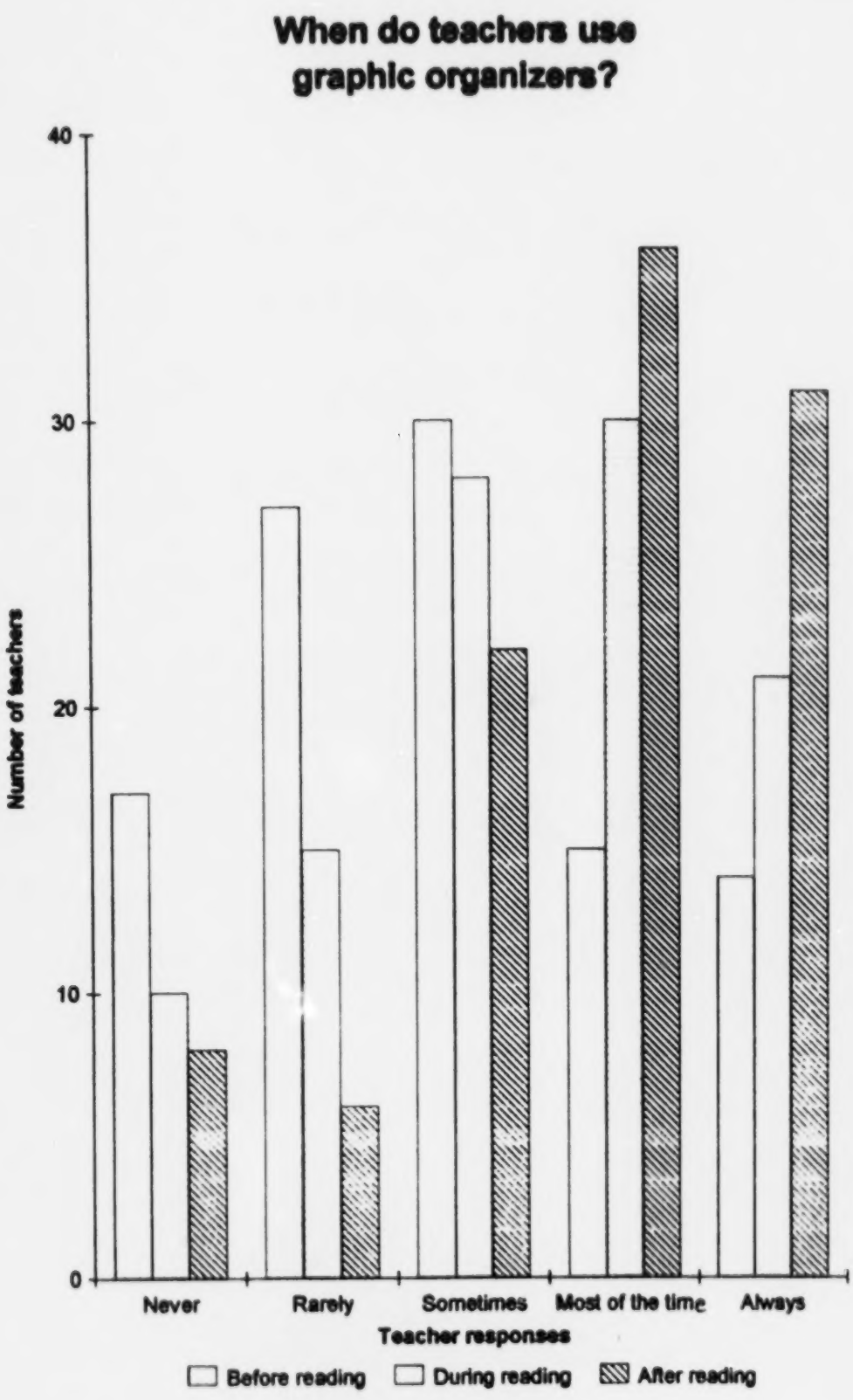
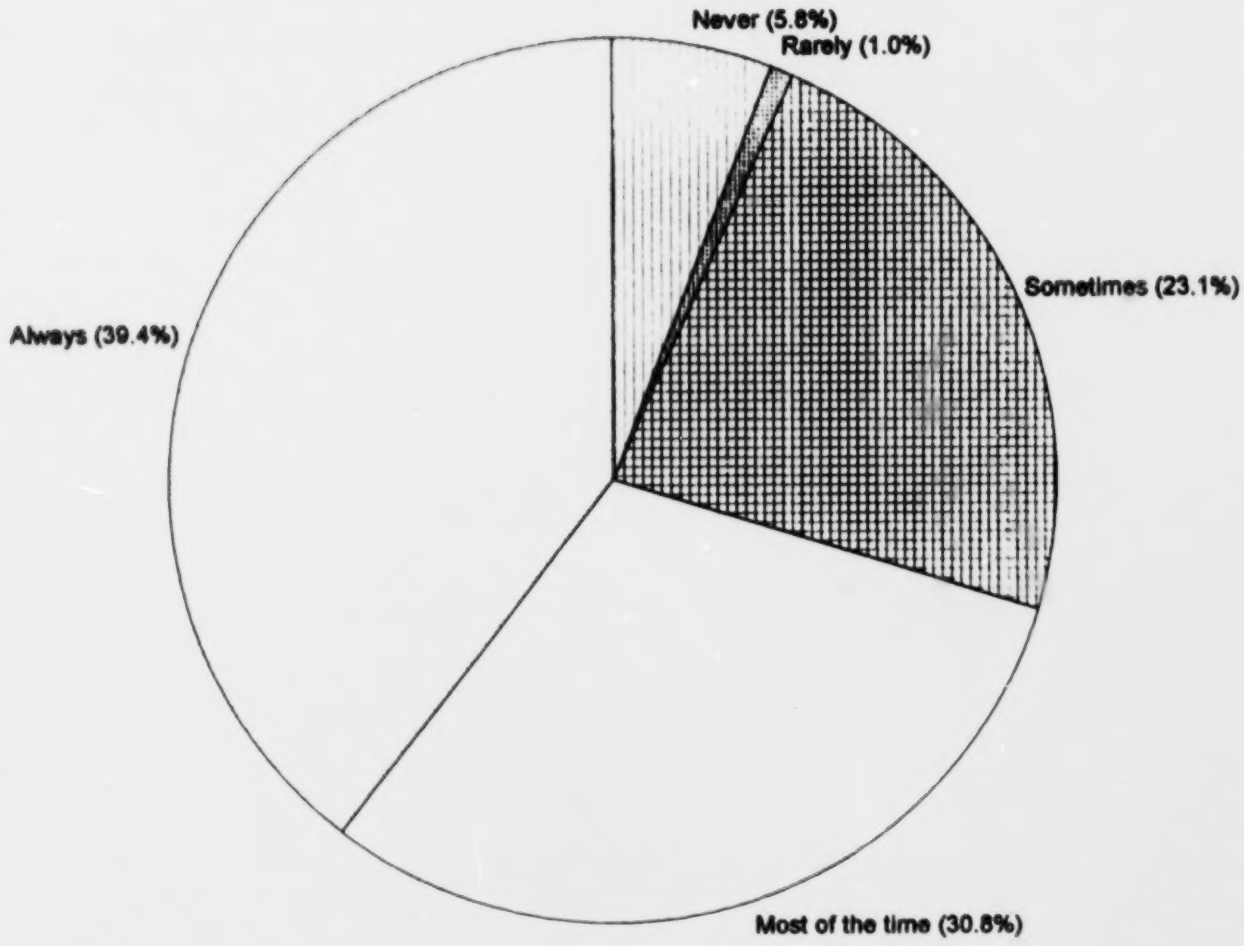
Appendix I


When do teachers use graphic organizers?
40
30
20
10
0
Number of teachers
Never
Rarely
Sometimes
Most of the time
Always
Teacher responses
Before reading
During reading
After reading

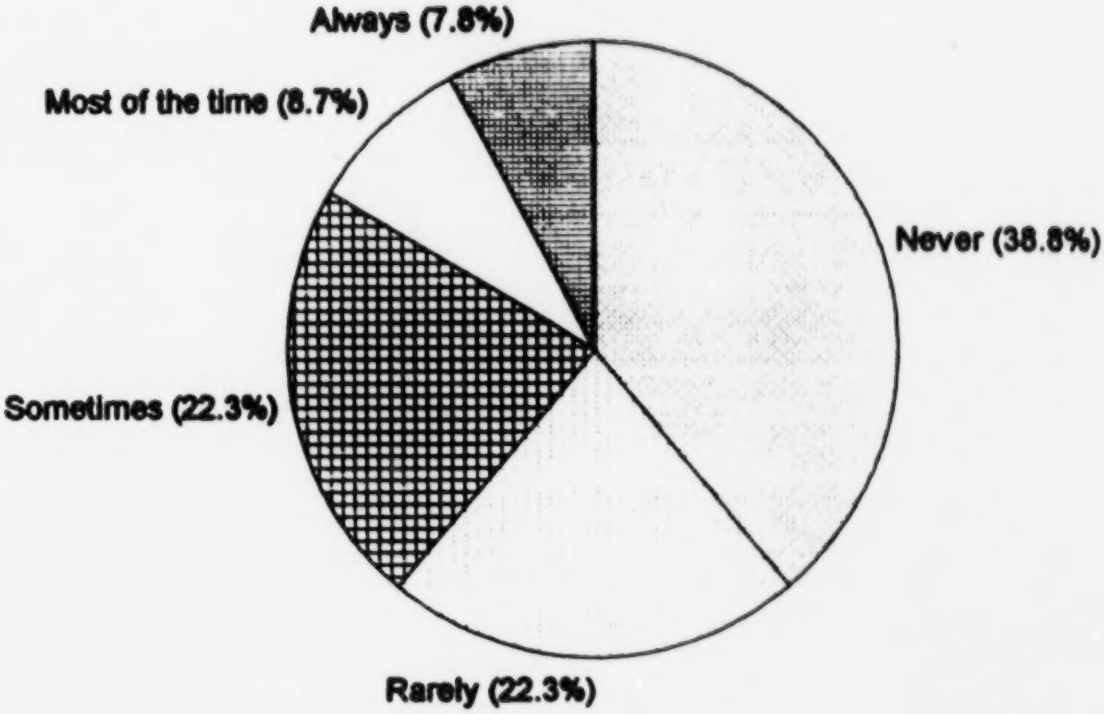
Appendix J

Do teachers use different shapes in their graphic organizers?



Appendix K

Do teachers grade student graphic organizers?



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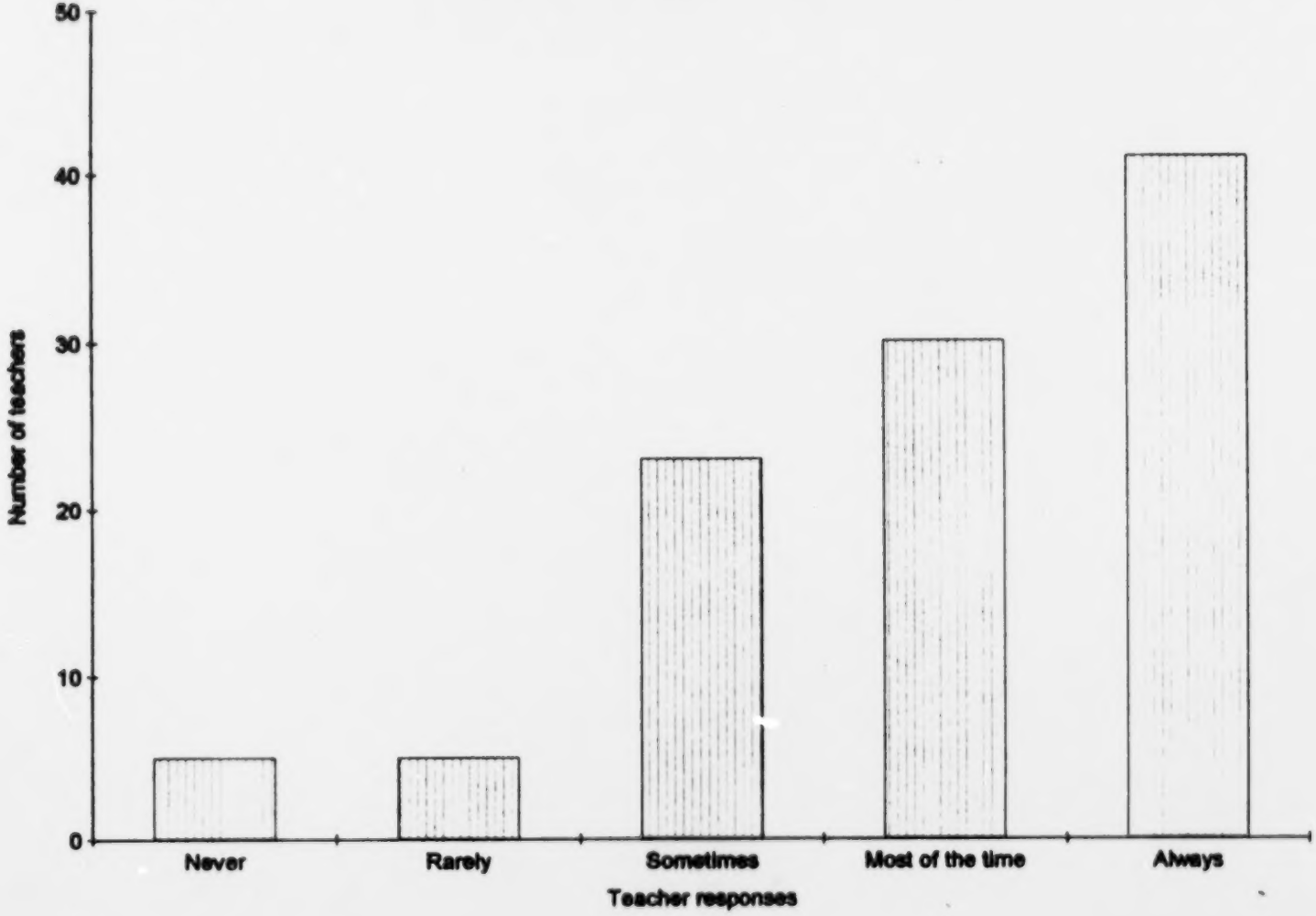
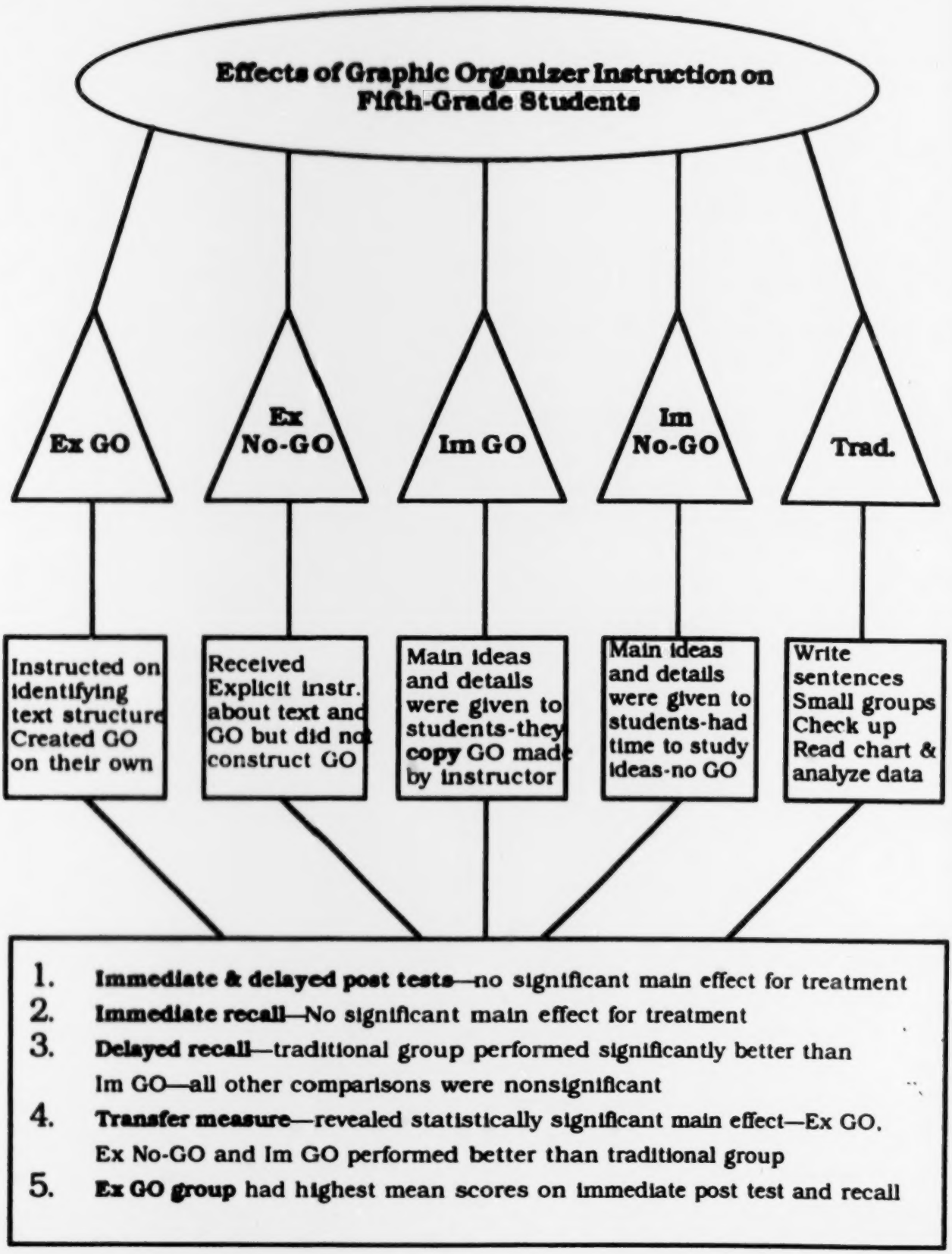
Appendix L

Do graphic organizers improve teacher presentation of materials?



Appendix M


Effects of Graphic Organizer Instruction on Fifth-Grade Students
Ex GO
Ex No-GO
Im GO
Im No-GO
Trad.
Instructed on identifying text structure Created GO on their own
Received Explicit instr. about text and GO but did not construct GO
Main ideas and details were given to students-they copy GO made by instructor
Main ideas and details were given to students-had time to study ideas-no GO
Write sentences Small groups Check up Read chart & analyze data
1. Immediate & delayed post tests—no significant main effect for treatment
2. Immediate recall—No significant main effect for treatment
3. Delayed recall—traditional group performed significantly better than Im GO—all other comparisons were nonsignificant
4. Transfer measure—revealed statistically significant main effect—Ex GO, Ex No-GO and Im GO performed better than traditional group
5. Ex GO group had highest mean scores on immediate post test and recall

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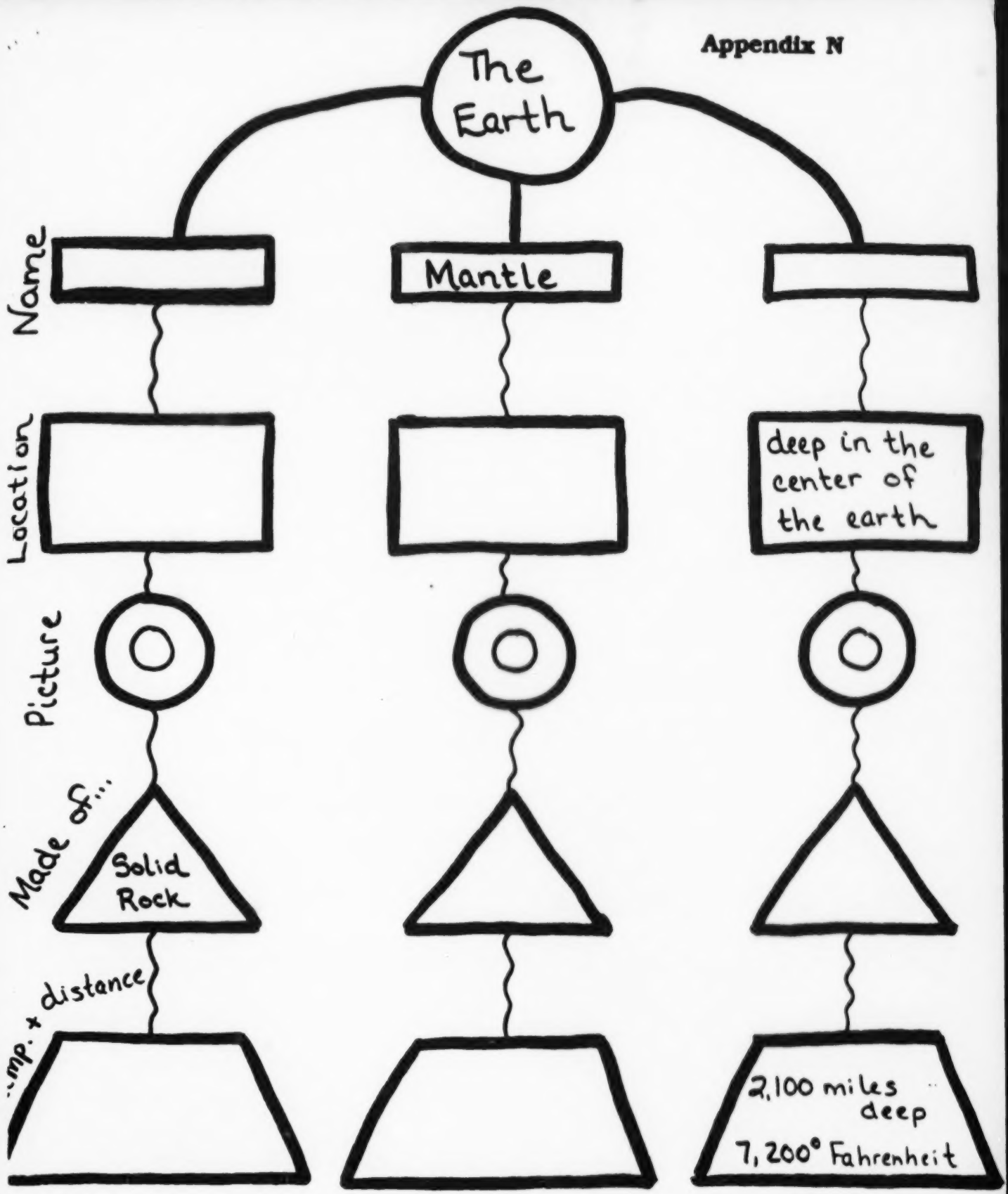
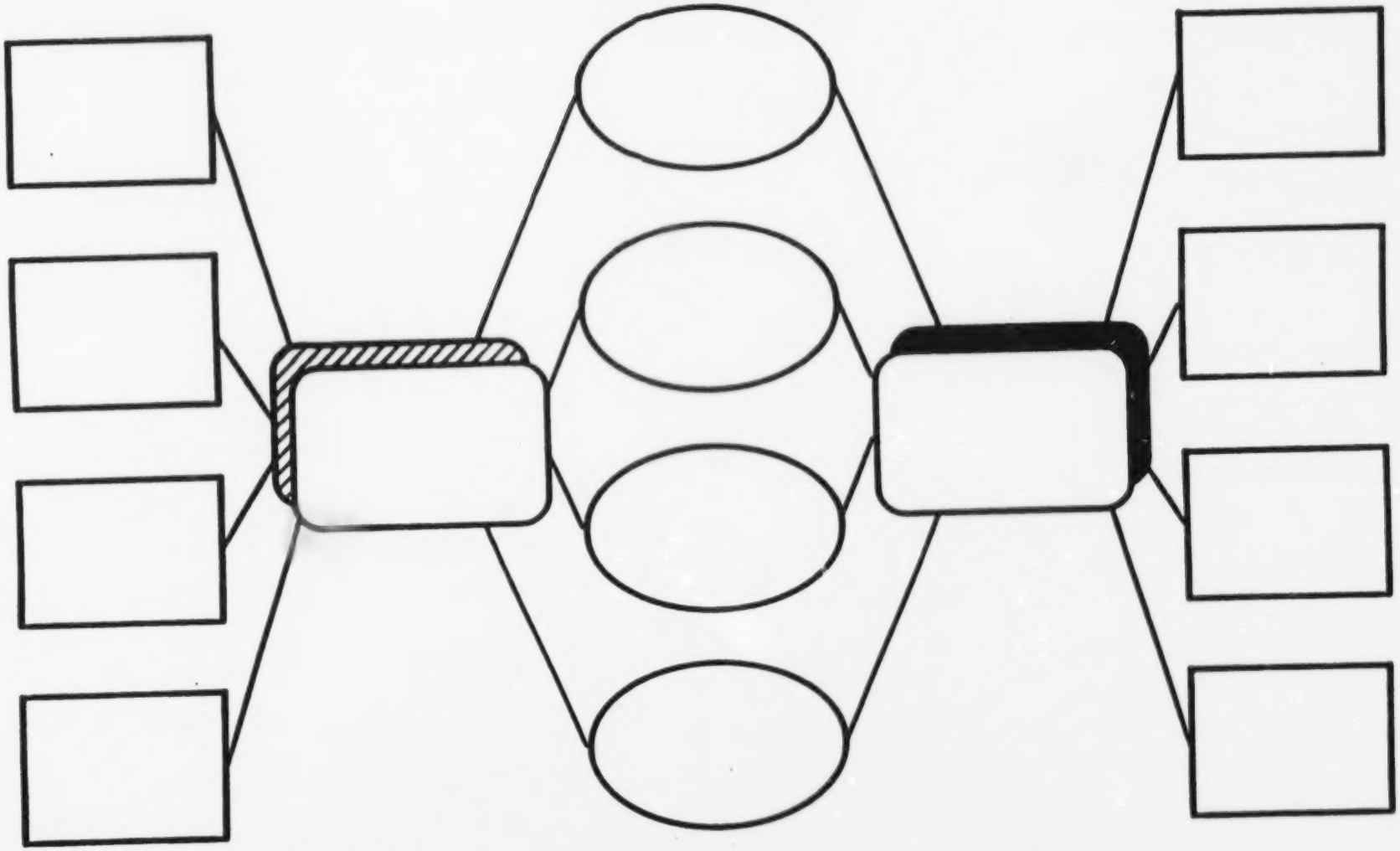

The Earth
Name
Mantle
Location
deep in the center of the earth
Picture
Made of...
Solid Rock
...mp. x distance
2,100 miles deep
7,200° Fahrenheit

Appendix O

DOUBLE BUBBLE
Compare and Contrast



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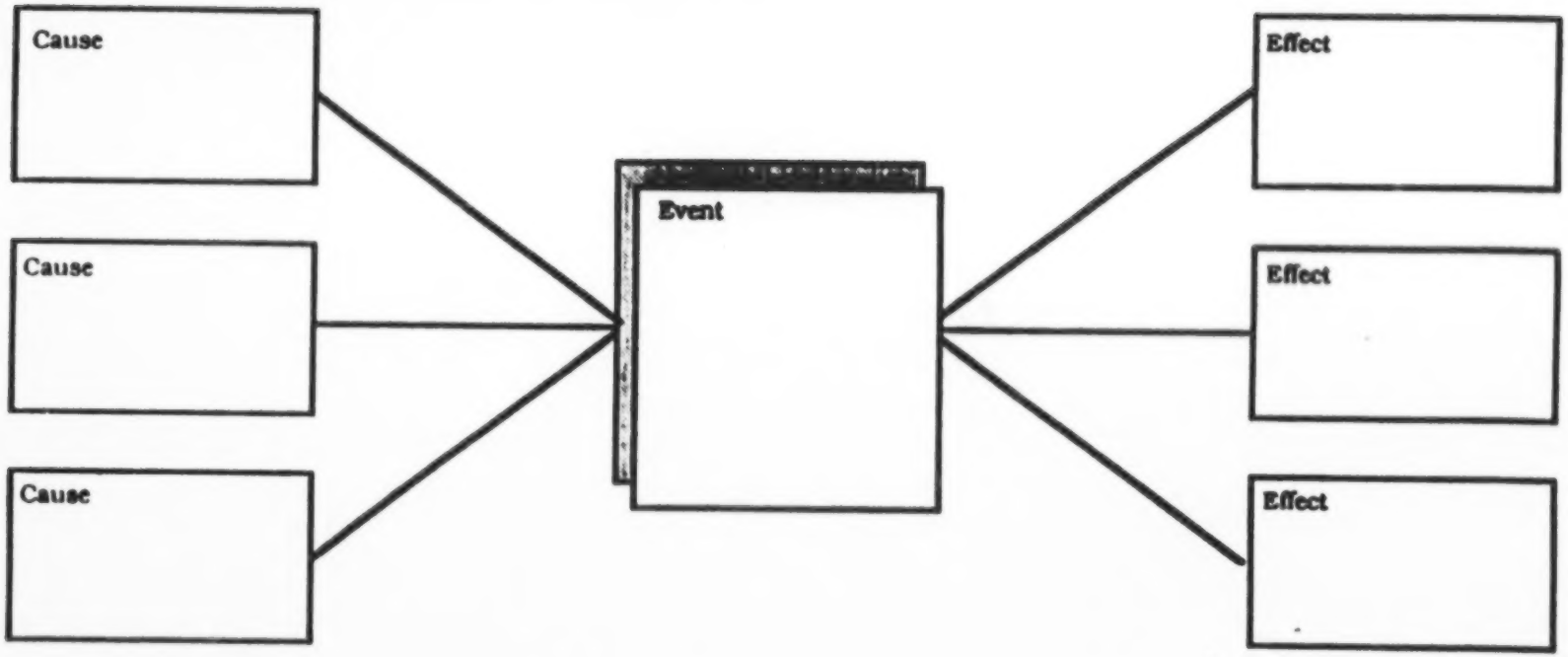
Appendix P

Cause and Effect



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C-27a

Appendix 9

CLUSTERING